

CLAIMS

What is claimed is:

1. An imageable element comprising an imageable layer over a substrate; in which:

5 the imageable layer comprises:

a photothermal conversion material, and

a sulfated polymer comprising sulfate groups and a polymer backbone; and

10 the sulfate groups are attached to aryl groups that are pendent to the polymer backbone, to alkyl groups, or both to aryl groups that are pendent to the polymer backbone and to alkyl groups.

2. The imageable element of claim 1 in which the sulfate groups are attached to aryl groups that are pendent to the polymer backbone.

15 3. The imageable element of claim 1 in which the sulfate groups are attached to alkyl groups.

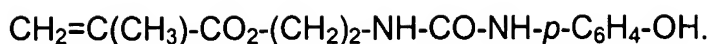
4. The imageable element of claim 1 in which the sulfated polymer comprises hydroxyl groups and the sulfate groups, and at least 50% of the sum of the hydroxyl groups and the sulfate groups are sulfate groups.

20 5. The imageable element of claim 4 in which at least 30 mol% of recurring units that comprise the polymer comprise either the hydroxyl group or the sulfate group.

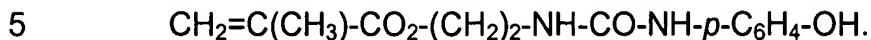
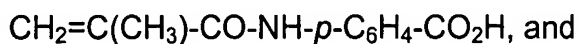
6. The imageable element of claim 5 in which the sulfate groups are attached to aryl groups that are pendent to the polymer backbone.

25 7. The imageable element of claim 5 in which the sulfate groups are attached to alkyl groups.

8. The imageable element of claim 5 in which the sulfated polymer is a co-polymer of methyl methacrylate, acrylonitrile, methacrylamide, and



9. The imageable element of claim 5 in which the sulfated polymer is a co-polymer of acrylonitrile, methacrylamide, N-phenylmaleimide,



10. The imageable element of claim 5 in which the sulfated polymer is a co-polymer of butyl methacrylate, styrene, hydroxyethyl methacrylate, and methacrylic acid.

10 11. A method for forming an image, the method comprising the steps of:

thermally imaging an imageable element comprising an imageable layer over a substrate and forming imaged imageable element comprising imaged and complementary unimaged regions in the imageable layer; and

15 developing the imaged imageable element and removing the imaged regions to form the image;

in which:

the imageable layer comprises:

a photothermal conversion material; and

20 a sulfated polymer comprising sulfate groups and a polymer backbone;

the sulfate groups are attached to aryl groups that are pendent to the polymer backbone, to alkyl groups, or both to aryl groups that are pendent to the polymer backbone and to alkyl groups; and

25 the imaged imageable element is developed with either an aqueous liquid or a fountain solution.

12. The method of claim 11 in which the sulfated polymer comprises hydroxyl groups and the sulfate groups, and at least 50% of the sum of the

hydroxyl groups and the sulfate groups are sulfate groups.

13. The method of claim 12 in which the imaged imageable element is developed with water.

14. The method of claim 13 in which the sulfate groups are attached to
5 aryl groups that are pendent to the polymer backbone.

15. The method of claim 13 in which the sulfate groups are attached to alkyl groups.

16. The method of claim 12 in which the imaged imageable element is developed with fountain solution.

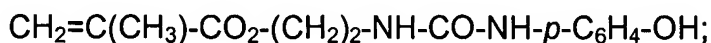
10 17. The method of claim 16 in which the sulfate groups are attached to aryl groups that are pendent to the polymer backbone.

18. The method of claim 16 in which the sulfate groups are attached to alkyl groups.

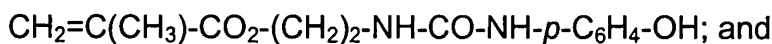
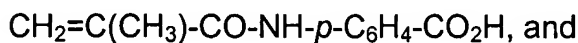
19. The method of claim 16 in which imaging is carried out on press.

15 20. the method of claim 19 in which the sulfated polymer is a selected from the group consisting of

a) copolymers of methyl methacrylate, acrylonitrile, methacrylamide, and



20 b) co-polymers of acrylonitrile, methacrylamide, N-phenylmaleimide,



c) co-polymers of butyl methacrylate, styrene, hydroxyethyl methacrylate, and methacrylic acid.